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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/11/2009 has been entered.

Response to Arguments

2.   Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection. See the new rejection below.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 1, 5, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over US PG Pub 2004/0016002 to Handelman (hereafter referenced as Handelman) in view of US PG Pub 2004/0123332 to Hanson (hereafter referenced as Hanson).

Regarding **claim 1,** "a data broadcast receiving apparatus capable of supporting an interactive service" reads on the configurable hardware device, such as STB, that reconfigures a circuit configuration (abstract and ¶0070) disclosed by Handelman and represented in Fig. 1 (element 20).

As to "apparatus comprising: a demultiplexing component to divide signals transmitted from the outside into signals of a kind" Handelman discloses (¶0079) that the television transmission received at the STB includes television programs as well as data applications. Handelman further discloses (¶0081) that the received television transmissions is decoded using IRD decoder as represented in Fig. 2 (element 100).

As to "a controlling component to control elements of the data broadcast receiving apparatus, the controlling component further to receive and to output contents of the signals divided in the demultiplexing component" Handelman discloses (¶0082, ¶0089, ¶0102) that the processor controls the elements of STB, where it decodes and outputs content as represented in Fig. 2 (element 125).

As to "a download processing component to receive downloadable data of the signals divided in the demultiplexing component" Handelman (¶0079) that the data decoded from the television transmission signals includes computer generated data and application. Handelman further discloses (¶0003, ¶0114, ¶0139) that the circuit reconfiguration is downloaded and upgraded by downloading it from a remote site. As to "determining the kind of the

downloadable data, and performing an upgrade by downloading the

downloadable data to provide an upgraded interactive data broadcasting

application" Handelman discloses (¶0093, ¶0125, ¶0127) that the upgrade is

provided by reconfiguring the hardware device in STB, where circuit

reconfiguration is useful and designed to support an operating system that is

used by the appliances. Handelman further discloses (¶0138, ¶0139) that the

circuit reconfiguration data is transmitted to the receiver, where it is received and

implemented in the hardware device of the STB.

     As to "a mobile terminal accessing component to access a mobile

communication network based on the downloadable data" Handelman discloses

(¶0083) that the modem in the STB is used to communicate with the Internet

using telephone network as represented in Fig. 2 (element 140). Handelman

further discloses (¶0044, ¶0091) that the STB, using its network connectivity,

serves to multiple appliances, such as cellular phone, where when the circuit

reconfiguration data is downloaded and installed in STB, it uses this data for the

appliances.

     As to "in response to a user request for accessing a mobile

communication network, executing the upgraded interactive data broadcasting

application to provide the interactive service to the user using the mobile terminal

accessing component to access the mobile communication network" Handelman

discloses (¶0127, ¶0139, ¶0140) that the computer system appliance

communicates with the hardware device of STB, where the reconfiguration data

is received and installed, and using the reconfiguration data, its designed to

support an OS of appliance, which is used to support various types of

applications. Handelman further discloses (¶0127) that the appliance

communicates with the hardware device of STB via the telephone network in

order to use the reconfiguration data.

Handelman meets all the limitations of the claim except "a user requests

for accessing a mobile communication network." However, Hanson discloses

(¶0095) that the user at the remote terminal accesses the transmitted software

program by a request for Internet access. Therefore, it would have been obvious

to one of the ordinary skills in the art at the time of the invention to modify

Handelman's system by submitting a user request to for accessing

communication network as taught by Hanson in order to test and verify the

upgraded software program.

Regarding **claim 5,** "a method for upgrading software by using

downloaded data inputted from the outside in a data broadcast receiving

apparatus" reads on the method of configurable hardware device, such as STB,

that reconfigures a circuit configuration (abstract and ¶0070) disclosed by

Handelman and represented in Fig. 1 (element 20).

As to "method comprising the steps of: a) selecting downloadable data

from broadcast stream in the data broadcast receiving apparatus" Handelman

discloses (¶0079) that the television transmission received at the STB includes

television programs as well as data applications. Handelman further discloses
(¶0081) that the received television transmissions is decoded using IRD decoder
as represented in Fig. 2 (element 100).

As to "b) determining the kind of the downloadable data and c) upgrading
the software according to the kind of the downloadable data to provide an
upgraded interactive data broadcasting application" Handelman discloses
(¶0093, ¶0125, ¶0127) that the upgrade is provided by reconfiguring the
hardware device in STB, where circuit reconfiguration is useful and designed to
support an operating system that is used by the appliances. Handelman further
discloses (¶0138, ¶0139) that the circuit reconfiguration data is transmitted to the
receiver, where it is received and implemented in the hardware device of the
STB.

As to "d) receiving and processing a request for accessing a mobile
communication network from the user" Handelman discloses (¶0083) that the
modem in the STB is used to communicate with the Internet using telephone
network as represented in Fig. 2 (element 140). Handelman further discloses
(¶0044, ¶0091) that the STB, using its network connectivity, serves to multiple
appliances, such as cellular phone, where when the circuit reconfiguration data is
downloaded and installed in STB, it uses this data for the appliances.

As to "e) executing the upgraded interactive data broadcasting application
if the user is authenticated to provide the interactive service to the user using a
mobile terminal accessing component to access a mobile communication

network" Handelman discloses (¶0127, ¶0139, ¶0140) that the computer system
appliance communicates with the hardware device of STB, where the
reconfiguration data is received and installed, and using the reconfiguration data,
its designed to support an OS of appliance, which is used to support various
types of applications. Handelman further discloses (¶0127) that the appliance
communicates with the hardware device of STB via the telephone network in
order to use the reconfiguration data. Handelman further discloses (¶0099) that
the authentication procedure is performed by the user device.

Handelman meets all the limitations of the claim except "a user requests
for accessing a mobile communication network." However, Hanson discloses
(¶0095) that the user at the remote terminal accesses the transmitted software
program by a request for Internet access. Therefore, it would have been obvious
to one of the ordinary skills in the art at the time of the invention to modify
Handelman's system by submitting a user request to for accessing
communication network as taught by Hanson in order to test and verify the
upgraded software program.

Regarding **claim 17,** "a data broadcast receiving apparatus supporting an
interactive service" reads on the configurable hardware device, such as STB, that
reconfigures a circuit configuration (abstract and ¶0070) disclosed by Handelman
and represented in Fig. 1 (element 20).

As to "apparatus comprising: a demultiplexing means for dividing signals from the outside into signals of a kind" Handelman discloses (¶0079) that the television transmission received at the STB includes television programs as well as data applications. Handelman further discloses (¶0081) that the received television transmissions is decoded using IRD decoder as represented in Fig. 2 (element 100).

As to "a controlling means for controlling elements of the data broadcast receiving apparatus, receiving and outputting contents divided in the demultiplexing means" Handelman discloses (¶0082, ¶0089, ¶0102) that the processor controls the elements of STB, where it decodes and outputs content as represented in Fig. 2 (element 125).

As to "a download processing means for receiving downloadable data divided in the demultiplexing means" Handelman (¶0079) that the data decoded from the television transmission signals includes computer generated data and application. Handelman further discloses (¶0003, ¶0114, ¶0139) that the circuit reconfiguration is downloaded and upgraded by downloading it from a remote site. As to "determining the kind of the downloadable data, and performing upgrade by downloading the downloadable data to provide an upgraded interactive data broadcasting application" Handelman discloses (¶0093, ¶0125, ¶0127) that the upgrade is provided by reconfiguring the hardware device in STB, where circuit reconfiguration is useful and designed to support an operating system that is used by the appliances. Handelman further discloses (¶0138,

¶0139) that the circuit reconfiguration data is transmitted to the receiver, where it is received and implemented in the hardware device of the STB.

As to "a mobile terminal accessing means for accessing a mobile communication network based on the downloadable data" Handelman discloses (¶0083) that the modem in the STB is used to communicate with the Internet using telephone network as represented in Fig. 2 (element 140). Handelman further discloses (¶0044, ¶0091) that the STB, using its network connectivity, serves to multiple appliances, such as cellular phone, where when the circuit reconfiguration data is downloaded and installed in STB, it uses this data for the appliances.

As to "in response to a user request for accessing a mobile communication network, executing the upgraded interactive data tobroadcasting application to provide the interactive service to the user using the mobile terminal accessing component to access the mobile communication network" Handelman discloses (¶0127, ¶0139, ¶0140) that the computer system appliance communicates with the hardware device of STB, where the reconfiguration data is received and installed, and using the reconfiguration data, its designed to support an OS of appliance, which is used to support various types of applications. Handelman further discloses (¶0127) that the appliance communicates with the hardware device of STB via the telephone network in order to use the reconfiguration data.

Handelman meets all the limitations of the claim except "a user requests

for accessing a mobile communication network." However, Hanson discloses

(¶0095) that the user at the remote terminal accesses the transmitted software

program by a request for Internet access. Therefore, it would have been obvious

to one of the ordinary skills in the art at the time of the invention to modify

Handelman's system by submitting a user request to for accessing

communication network as taught by Hanson in order to test and verify the

upgraded software program.

5.   **Claims 2-4, 9, and 10** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Handelman in view of Hanson as applied claims 1 and 5 above, and

further in view of US Patent 6,941,341 to Logston et al. (hereafter referenced as

Logston).

Regarding **claim 2,** "the data broadcast receiving apparatus wherein the

controlling component includes: a middleware processing component to process

middleware of the data broadcast receiving apparatus, controlling the download

processing component" Handelman discloses (¶0087, ¶0102) that the processor

in the STB performs all the functions and controls the receiving of reconfiguration

data.

As to "an operating component to operate the data broadcast receiving

apparatus and controlling the middleware processing component and the mobile

terminal accessing component" Handelman discloses (¶0042) that the STB
operates the reconfigured hardware device to perform the test.

Combination of Handelman and Hanson meets all the limitations of the
claim except "receiving a middleware module and a middleware plug-in software
included in the downloadable data from the download processing component."
However, Logston discloses (col.4, lines 21-26) that the program distributed to
STB includes plurality of types of modules including add-on module. Therefore, it
would have been obvious to one of the ordinary skills in the art at the time of the
invention to modify Handelman and Hanson's inventions by using plug-in
software in download data application as taught by Logston in order to facilitate
additional capabilities within client device (col.4, lines 34-36).

Regarding **claim 3,** "the data broadcast receiving apparatus wherein the
download processing component determines the kind of the downloadable data
by using a downloadable data information descriptor describing data broadcast
specification information" Logston discloses (col.29, lines 56-66) that the
transport stream comes in receiver includes System Information (SI) table that
describes elements for applications and other data. Therefore, it would have
been obvious to one of the ordinary skills in the art at the time of the invention to
modify Handelman and Hanson's inventions by using system information in the
stream as taught by Logston in order to recognize the downloadable data.

Regarding **claim 4,** "the data broadcast receiving apparatus as recited in claim 3, wherein the downloadable data information descriptor includes at least one among Program Specific Information (PSI) of the Moving Picture Experts Group (MPEG)-2 system, Data Service Table (DST) of the Advanced Television Systems Committee (ATSC) data broadcasting, Application Information Table (AIT) of the DVB-Multimedia Home Platform (MHP), and System Information (SI) of the Digital Multimedia Broadcasting (DMB)" Logston discloses (col.29, lines 56-66) that the transport stream comes in receiver includes System Information (SI) table. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Handelman and Hanson's inventions by using system information in the stream as taught by Logston in order to describe all of the elements of the stream (col.29, lines 65-66).

Regarding **claim 9, c**ombination of Handelman and Hanson meets all the limitations of the claim except "the method wherein the kind of the downloadable data includes a middleware module for accessing a mobile communication terminal and a middleware plug-in." However, Logston discloses (col.4, lines 21-26) that the program distributed to STB includes plurality of types of modules including add-on module. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Handelman and Hanson's inventions by using plug-in software in download data application as

taught by Logston in order to facilitate additional capabilities within client device

(col.4, lines 34-36).

Regarding **claim 10,** "the method wherein the step c) includes the steps

of: c1) upgrading the software by using the middleware module" Handelman

discloses (¶0091) that the user device is used to update software programs for

connected appliances.

As to "c2) upgrading the software by using the middleware plug-in"

Handelman discloses (¶0044, ¶0135) that the plug-in card is used to upgrade

software in computer as represented in Fig. 5 (element 600).

6.   **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over

Handelman in view of Hanson as applied claim 5 above, and further in view of US

Patent 6,487,723 to MacInnis (hereafter referenced as MacInnis).

Regarding **claim 6,** combination of Handelman and Hanson meets all the

limitations of the claim except "the method wherein the step a) includes: a1)

monitoring the presence of a downloadable data information descriptor in the

broadcast stream." However, MacInnis discloses (col.7, lines 44-54) that the

terminal receives descriptor table from the network and constantly checks for a

newer software version as represented in Fig. 4 9 (element 404).

As to "a2) extracting data identification information from the downloadable

data information descriptor" MacInnis discloses (col.4, lines 23-30, 37-40) that

the data stream ID included in the module is extracted from descriptor table

transmitted to receiver. Therefore, it would have been obvious to one of the

ordinary skills in the art at the time of the invention to modify Handelman and

Hanson's systems by monitoring the presence of data information as taught by

MacInnis in order to download the latest/upgraded software program.

7.   **Claims 7, 8, 11 and 12** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Handelman in view of Hanson, Logston, and MacInnis.

Regarding **claim 7,** combination of Handelman, Hanson, and MacInnis

meets all the limitations of the claim except "the method wherein the

downloadable data information descriptor includes at least one among Program

Specific Information (PSI) of the Moving Picture Experts Group (MPEG)-2

system, Data Service Table (DST) of the Advanced Television Systems

Committee (ATSC) data broadcasting, Application Information Table (AIT) of the

DVB-Multimedia Home Platform (MHP), and System Information (SI) of the

Digital Multimedia Broadcasting (DMB)." However, Logston discloses (col.29,

lines 56-66) that the transport stream comes in receiver includes System

Information (SI) table. Therefore, it would have been obvious to one of the

ordinary skills in the art at the time of the invention to modify Handelman, Hanson

and MacInnis' inventions by using system information in the stream as taught by

Logston in order to describe all of the elements of the stream (col.29, lines 65-

66).

Regarding **claim 8,** "the method wherein the kind of the downloadable

data is determined based on the data identification information in the step b)"

MacInnis discloses (col.4, lines 25-30) that the terminal receives a list of modules

and the location such as data stream ID where this modules can be found to

download the upgraded software as represented in Fig. 3A. Therefore, it would

have been obvious to one of the ordinary skills in the art at the time of the

invention to modify Handelman and Hanson's systems by monitoring the

presence of data information as taught by MacInnis in order to download the

latest/upgraded software program.

Regarding **claim 11,** "the method wherein the step c) includes the steps

of: c3) determining whether the version of the downloaded middleware module is

the same as the version of the pre-established middleware version" MacInnis

discloses (col.7, lines 44-47) that the comparison is made between the software

version number available in the received descriptor and the currently executing

software version number in the terminal.

As to "c4) setting up the downloaded middleware module, if the version of

the downloaded middleware module is not the same as the version of the pre-

established middleware version" MacInnis discloses (col.7, lines 50-54) that if the

software version number of the descriptor table is newer than the software

version number in the terminal, then the system download the newer version.

Therefore, it would have been obvious to one of the ordinary skills in the art at

the time of the invention to modify Handelman, Hanson, and Logston's systems

by monitoring the presence of data information as taught by MacInnis in order to

download the latest/upgraded software program.

Regarding **claim 12,** "the method wherein the step c) includes the steps

of: c5) suspending an application in execution temporarily and c6) executing the

temporarily suspended application after the setup of the middleware module"

MacInnis discloses (col.7, lines 53-54) that the system shuts down and turns on

the device by rebooting the terminal after newer version is installed. In addition,

same motivation is used as rejection to claim 11.

8.   **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over

Handelman in view of Hanson and Logston as applied claim 10 above, and further in

view of US Patent 6,078,951 to Pashupathy et al. (hereafter referenced as Pashupathy).

Regarding **claim 13,** combination of Handelman, Hanson, and Logston

meets all the limitations of the claim except "the method wherein the step c2)

includes the steps of: c2-1) checking whether the Multipurpose Internet Mail

Extensions (MIME) format of the downloaded middleware plug-in is registered."

However, Pashupathy discloses (col.1, lines 24-31; col.4, lines 28-30, 38-41) that

the downloaded software program includes MIME format listed in table for STB is

registered as represented in Figs. 3 and 4 (elements 320, 420). As to "c2-2" if

the format of the downloaded middleware plug-in is new, registering the format of

the downloaded middleware plug-in and c2-3) setting up the downloaded

middleware plug-in" Pashupathy discloses (col.4, lines 50-56) that given a MIME

format, client device is updated each time a new program format is received and

installed onto the client device. Therefore, it would have been obvious to one of

the ordinary skills in the art at the time of the invention to modify Handelmn,

Hanson, and Logston's inventions by using MIME format for downloaded data as

taught by Pashupathy so the user does not have to search for the program that

supports specific format by regularly updating the table (col.1, lines 36-37).

9.   **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over

Handelman in view of Hanson as applied to claim 5 above, and further in view of US

Patent 6,237,039 to Perlman et al (hereafter referenced as Perlman).

        Regarding **claim 15,** "the method wherein the step d) includes the steps

of: d1) checking whether the downloadable data include a module capable of

accessing a mobile terminal" Handelman discloses (¶0139) that once the

reconfiguration data is received, the device tested it to determine the correct

operation of it.

        As to "d3) if the request for accessing the mobile communication network

from the user can be executed, accessing the mobile communication network by

executing user authentication and a mobile terminal accessing program"

Handelman further discloses (¶0099) that the authentication procedure is performed by the user device, such as cellular phone.

As to "a user requests for accessing a mobile communication network" Hanson discloses (¶0095) that the user at the remote terminal accesses the transmitted software program by a request for Internet access. In addition, same motivation is used as rejection to claim 5.

Combination of Handelman and Hanson meets all the limitations of the claim except "d2) if the access to the mobile terminal is possible, checking whether the request for accessing to the mobile communication network from the user can be executed." However, Perlman discloses (col.4, lines 49-52, 56-59) that the user requests a web page on the Internet from the web terminal and the system is checking and waiting to see if the user requested page can be executed. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Handelman and Hanson's inventions by checking to see if user's requested page/program on the Internet can be executed as taught by Perlman in order to verify that user has an access to Internet.

10.   **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Handelman in view of Hanson and Perlman as applied to claim 15 above, and further in view of MacInnis.

Regarding **claim 16,** combination of Handelman and Hanson meets all the limitations of the claim except "the method wherein whether the request for accessing to the mobile communication network from the user can be executed is determined based on module information of the mobile terminal of the user or communication company information." However, MacInnis discloses (col.5, lines 16-19) that the location information associated with module determines the location to download module from the manufacturer's site using Internet. Therefore, it would have been obvious to one of the ordinary skills in the art at the time of the invention to modify Handelman, Hanson and Perlman's systems by accessing network based on company's information as taught by MacInnis in order to download the latest/upgraded software program.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent 7,260,829 to Hendricks discloses apparatus for upgrading programming for existing STB to provide advanced functional capabilities.
- US PG Pub 2005/0081254 to Carlson discloses a method for configuring a device.
- US Patent 6,469,742 to Trovato discloses devices with upgrade capability.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PINKAL CHOKSHI whose telephone number is (571)

270-3317. The examiner can normally be reached on Monday-Friday 8 - 5 pm (Alt.

Friday off).

    If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Brian Pendleton can be reached on 571-272-7527. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

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